AMENDMENTS TO THE SPECIFICATION

Please amend paragraphs 010, 011, 032, 034, 038, 048, 055, 060, and 062 in the Specification as follows:

[010]   The systems and methods determine the additional platform locations to add to the set of platforms by adding the additional platform locations to the set and determining whether the additional platform locations are desirable, based on at least a maximum target limit, a drilling distance, and target values associated with the additional platform locations. Targets represent reservoir or drilling locations for drilling wells. The maximum target limit is determined by applying at least one multiplier to approximate an average number of targets to assign to each of the additional platform locations and receiving a user-supplied number of slots for each of the additional platform locations. A target value is a numerical value associated with the distribution of a property of interest associated with a reservoir (such as the distribution of porosity or oil saturation). In addition, the systems and methods may also apply at least one multiplier to approximate an average number of targets to assign, receive user-supplied number of slots, and determine a maximum target limit for each additional platform location.

[011]   The systems and methods, in accordance with the present invention, optimize the platform location set by (a) setting a step-out distance equal to a fraction of the platform reach; (b) moving each platform in the set in eight compass directions and, if a new location is better than the original location, moving the platform to the new location; (c) executing step (b) until

new locations for each platform are no longer achieved; and (d) executing steps (a) through (c) progressively decreasing the step-out distance until a more desirable set of platforms is no longer achieved. The step-out distance may be reduced ~~reduce~~ by a predetermined amount for each execution of step (d) above.

[032] In methods consistent with the present invention, a first step in generating platforms for a set of drilling targets may be to derive a set of possible locations. One method consistent with the invention may use three methods to arrive at the possible target locations. A first method may be to use the actual X and Y coordinates of each target developed using the methodology of an automatic target selection method described in ~~U.S. Patent Application No. ____, filed on ____,~~ U.S. Patent Application No. 09/622,976, filed on July 18, 2003, which is herein incorporated by reference, as the potential surface locations. However, it is important to note that the exemplary automatic target selection method of ~~U.S. Patent Application No. ____~~ U.S. Patent Application No. 09/622,976 may compliment, but is not required by, the exemplary automated platform selection method consistent with the present invention.

[034] The validate platform location method may be used to test whether a potential platform location, either in the initial generation of possible locations or during future optimization, may be in a geographically valid area. To determine[[d]] whether the platform location is valid, the method compares the location of the platform in two-dimensions against a set of exclusionary polygons. If the location is inside one of the polygons, it may be considered

to be an invalid location. This method may take into account trenches, fairways, pipelines, shallow hazards, environmentally sensitive areas, shipwrecks, and other obstacles.

[038] The count reachable targets sub-method may also use one or more multipliers to approximate the average number of targets per well based on the type of wells that may be drilled. From these multiplier(s) and a user-supplied number of slots, the sub-method determines the maximum target limit per platform and only allocates up to that maximum to each platform. The count reachable targets sub-method may also take into account the value associated with the targets associated with each platform in determining the best set of possible platforms. If the targets are selected using the actual X and Y coordinates of the automated target selection method described above, the values used in the target selection method may be imported into the count reachable targets sub-method. It should be understood that each target represents a reservoir or drilling location for drilling a well and that the targets may be associated with a numerical value associated with the distribution of a property of interest associated with a reservoir (such as the distribution of porosity or oil saturation). The count reachable targets sub-method may take into account any hazards (shallow gas, faults, etc.) existing between a possible platform location and a given target. If any hazards stand between the two in 3 dimensions, that target may not be counted for that location, in addition to any surface hazards that may invalidate the location initially. The count reachable targets sub-method may also, if the user indicates, take into account a range of drilling directions, only counting those targets whose azimuthal angle to the location is within a user-determined range, allowing for greater borehole stability.

[048] Figures 8-10 are flowcharts illustrating the exemplary methods for selecting targets and optimizing platform generation consistent with the present invention. Method 800 starts (Stage 802) and proceeds to Stage 804. In Stage 804, the user selects the method for selecting one or more possible target locations. If the user selects the targets generated with the automated target selection method described in ~~U.S. Patent Application No.~~ U.S. Patent Application No. 09/622,976, the actual X and Y coordinates of each target selected may be used as the potential surface locations for the platforms. (Stage 806) It is important to note that the exemplary automatic target selection method of ~~U.S. Patent Application No.~~ U.S. Patent Application No. 09/622,976 may compliment, but is not required by, the exemplary automated platform generation method of this embodiment of the present invention.

[055] If at Stage 826 (refer to Figure 8), the user did not select the targets, method 800 proceeds to generate a grid of evenly spaced platform locations (Stage 838) and execute the stages in Figure 9 described above in connection with the use of the targets selected using the automated target selection method disclosed in ~~U.S. Patent Application No.~~ U.S. Patent Application No. 09/622,976.

[060] Then, method 1200 tests each possible platform by taking into account the maximum target limit, total drilling distance to the targets, and the target values. (Stage 1212) It should be understood that a maximum target limit represents the maximum number (or count) of drilling locations which are reachable by each possible platform. During the testing stage, one

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platform location may be considered better than another if the inclusion of the platform in the list causes the total set of platforms to either reach more targets, reach the same number of targets with less total distance, or reach a number of targets that have a higher cumulative value <u>of a property of interest associated with a reservoir (such as the distribution of porosity or oil saturation)</u>. Based on the above criteria, method 1200 determines and returns the best platform locations and ends. (Stages 1214 and 1216)

[062] If one of the new eight locations is better than the original, the platform is moved to that location (Stages 1310 and 1312) and the method loops back to Stages 1306 and 1308 and repeats the relocation, validation, and testing of the platform. When none of the eight locations produces a better result, method 1300 determines if all the platforms have been adjusted. (Stage 1320) If all the platforms have not been adjusted, method 1300 loops back to Stage 1306 and performs all the stages <u>described</u> ~~describe~~ above for the next platform to determine a better platform location for the remaining platforms.